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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/623,833	07/21/2003	Giuseppe Rotondo	GEN-901A (22177-0023)	6523

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EXAMINER

SUCHECKI, KRYSZYNA

ART UNIT	PAPER NUMBER
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2882

DATE MAILED: 09/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

<b>Office Action Summary</b>	<b>Application No.</b> 10/623,833	<b>Applicant(s)</b> ROTONDO ET AL.	
	<b>Examiner</b> Krystyna Suchecki	<b>Art Unit</b> 2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 April 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 and 18-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 and 18-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 April 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>06/20/05</u> | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Objections***

1. Claims 2, 8 15 and 20 are objected to because of the following informalities: Claim 2 compares a size to a “conventional” size, which has no clear or definite meaning. Likewise, “narrow” in Claim 8 has no definite meaning. Claim 15 is objected to since it is not clear how the patient can be held firm, or immobilized, according to the goal of the invention, if the patient positioning system is moving during a scan process. Applicant’s assistance is requested in assuring there is proper antecedence in the specification for the “firm” limitation in claim 15. Claim 20 is objected to for a spelling error in line 6, where “Cephalographic” should appear. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-10 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Zeller (US 6,055,292).

4. Regarding claims 1 and 16, Zeller teaches a dental x-ray diagnostic apparatus for performing real-time digital radiography of a patient skull and method for same, comprising: a base frame for supporting the apparatus (Figure 7 and Column 2, line 55, the incorporated reference corresponding to US 5,511,106); a sliding frame configured to move vertically along the base frame and the sliding frame being moved by an independent actuator under

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microcomputer control (Figure 7); a rotary frame ("Rotary Unit") coupled to the sliding frame by a cinematic unit (2), and the rotary frame supporting an x-ray source (3) at one end, and an x-ray imager (18) at the other end; the said-cinematic unit being configured to execute orbital movements of the said-x-ray source and the x-ray imager around the patient skull, wherein the orbital movements comprise one rotation movement and two linear movements in a plane, and the orbital movements of the x-ray source and the x-ray imager being driven by independent actuators in the cinematic unit controlled by data supplied from a microcomputer. (The cinematic elements are taught by Figure 7 of Zeller and by the incorporation of the reference at Column 2, line 55. US 5,511,106 teaches orbital movement (Column 3, lines 22-33) by showing computer driven motors of a cinematic unit as having orbital movements of EP 0 229 308, which corresponds to 4,811,372.)

5. Regarding claim 2, Zeller teaches the apparatus as set forth in claim 1 wherein the x-ray imager (18) has an active area of a size approximately equivalent to a conventional radiographic film.

6. Regarding claim 3, Zeller teaches an apparatus as in claim 1, further comprising a second x-ray imager (18').

7. Regarding claim 4, Zeller teaches the apparatus as set forth in claim 3, wherein said second x-ray imager (18') has a linear shaped active area of a size less than a conventional radiographic film.

8. Regarding claim 5, Zeller teaches the apparatus as set forth in claim 3 wherein said second x-ray imager is associated with a horizontal scanning movement (Figure 1, rotation

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arrow), and has a linearly shaped active area oriented vertically with a height substantially greater than a width (Figure 5).

9. Regarding claim 6, Figure 2 of Zeller teaches the apparatus as set forth in claim 3 wherein said second x-ray imager (18') is associated with a horizontal scanning movement, and is provided with an independent active actuator (9) capable of performing a linear translation of said second x-ray imager during a scanning movement under computer control.

10. Regarding claim 7, Zeller teaches the apparatus as set forth in claim 3, wherein said second x-ray imager (18') is associated with a vertical scanning movement (Column 3, lines 7-38), and has a linearly shaped active area oriented horizontally with a width substantially greater than a height (Figure 3).

11. Regarding claim 8, Zeller teaches the apparatus as set forth in claim 3, wherein said second x-ray imager (18') is associated with a rotational scanning movement, and has a linearly shaped active area for use with a narrow x-ray beam. The intended use of the apparatus is not germane to the issue of patentability.

12. Regarding claim 9, Zeller teaches the apparatus as set forth in claim 3, wherein said second x-ray imager (18') is associated with a vertical, or horizontal, or rotational scanning movement (Column 3, lines 7-38), and an x-ray beam is collimated by a collimator (15) intercepting the x-ray beam before a patient and in proximity of the patient, which is provided with an independent active actuator (14) capable of performing the linear or rotational translation of the collimator during a scanning movement under computer control.

13. Regarding claim 10, Zeller teaches the apparatus as set forth in claim 1, comprising a collimator (10) operated by independent active actuators under microcomputer (29) control,

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allowing resizing of an x-ray field to any desired format required for a chosen radiographic modality as well as a translation of the x-ray field during a vertical or horizontal or rotational scanning process (Column 6, lines 38-45).

14. Claims 20, 22 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Doebert (US 5,511,106).

15. Regarding Claim 20, Doebert teaches, a method for operating a dental x-ray diagnostic apparatus performing real- time digital radiography in Cephalography, comprising the steps of: aligning an x-ray source with an x-ray imager, either manually or automatically, wherein the step of aligning the x-ray source with an x-ray imager includes the step of relocating the x-ray imager, either manually or automatically, from a Panoramic position to a Cephalographic position (Column 3, lines 22-47); positioning a patient by a patient positioning system (Column 3, lines 16-21); setting a collimator to provide a narrow x-ray beam laying in a vertical plane (Column 6, lines 20-27); starting a scanning process during which the x-ray beam is linearly translated through a patient skull in a horizontal (Y) direction by a coordinated horizontal movement of the collimator and the x-ray imager under computer control (Column 5, line 36- column 6, line-51 and Figure 7, item 40); and, performing acquisition of image data by the x-ray imager, and computer processing (Column 9, lines 8-13) for reconstruction of a diagnostic image.

16. Regarding claim 22, Doebert teaches, as above for claim 20, a method for operating a dental x-ray diagnostic apparatus performing real- time digital radiography in Cephalography, and further teaches the steps of: setting a collimator to provide a narrow x-ray beam laying in a

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horizontal plane; and starting a scanning process during which the x-ray beam is linearly translated through a patient skull in a vertical (V) direction by a coordinated vertical movement of the primary x-ray collimator and the x-ray imager under computer control (Column 5, line 36-Column 6, line 8).

17. Regarding claim 23, Doebert teaches, as above for claim 20, a method for operating a dental x-ray diagnostic apparatus performing real-time digital radiography in Cephalography, and further teaches the steps of: starting a scanning process during which the x-ray beam is rotationally translated (swept) through a patient skull by a coordinated rotational movement of the collimator (52) and the x-ray imager (4) under computer control, while the x-ray source (3) is fixed in position (Column 6, lines 20-42).

***Claim Rejections - 35 USC § 103***

18. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

19. Claims 11, 14, 15, and are rejected under 35 U.S.C. 103(a) as being unpatentable over Zeller in view of Doebert (US 5,511,106).

20. Regarding Claims 11, 14, 15, Zeller teaches a computer tomography apparatus and method as above for claims 1 and 3. A panoramic device is modified for a transverse scanning system (Column 2, line 55, corresponding to US 5,511,106) and contains a panel with first and second x-ray imagers (18, 18').

21. Zeller fails to expressly incorporate the Cephalographic features of the device such that the device has a mechanism providing relocation of said second x-ray imager selectively between a Cephalographic and a Panoramic position wherein such mechanism comprises a detachable connector allowing in a secure and ergonomic way the manual connection and disconnection of the x-ray imager selectively between the Cephalographic and the Panoramic position. Zeller does not expressly incorporate the patient positioning system used in Cephalography as provided with independent active actuators by which a patient positioning system can be translated relative to a corresponding support frame in order to maintain a firm patient position during a horizontal or vertical scanning process where a movement of the support frame is involved.

22. However, Doebert teaches a device that is selectable between a Cephalographic and the Panoramic position and that has a detachable mechanism to provide relocation of an x-ray imager panel allowing secure and ergonomic connection and disconnection of the x-ray imager selectively between the Cephalographic and the Panoramic position. The connection allows the panel to be lengthened or shortened dependent upon the type of exposure (Column 5, line 1-18). A micro processor (40) controls active actuators (drive motors D1, D3) to maintain a firm patient position during a horizontal or vertical scanning process where the movement of the same support frame is involved. The control assures that the patient skull position remains constant (Column 5, line 36-Column 6, line 8). The patient positioning system has parts (gears) that translate to effectively allow the patient to remain stationary while exposure and moving occurs (Column 3, lines 52-63). The advantages of including as many functions as is possible in to a single device is also taught in Doebert. By allowing functions such as cephalography and

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panoramic exposures in a single device, the outlay of the device is minimized while increasing only the peripheral equipment for the device (Column 2, lines 12-38).

23. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a cephalographic function in the panoramic and transversal device of Zeller, since the inclusion minimizes outlay (Doebert, Column 2, lines 12-38). The inclusion of a mechanism or detachable mechanism to allow transition between cephalographic and panoramic positions would allow an x-ray imager to be lengthened or shortened dependent upon the type of exposure (Doebert, Column 5, line 1-18). Active actuators under control would assure that the patient skull position remains constant and translational parts associated with the patient positioning system would ensure the effective, firm, stationary position of the patient. (Doebert, Column 5, line 36-Column 6, line 8 and Column 3, lines 52-63).

24. Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zeller and Doebert as applied to claim 11 above, and further in view of Fairleigh (US 5,997,176).

25. Regarding Claims 12 and 13, Zeller and Doebert teach an apparatus as above in claim 11 as well as the use of a microcomputer (Zeller, 29) for control upon user command. An arm (Doebert, 6) can be used to provide relocation of parts.

26. Zeller and Doebert fail to teach a mechanism comprising a telescopic arm or a folding arm for providing relocation either manually or automatically by an independent actuator under microcomputer control upon user command.

27. Fairleigh teaches the automated movement of a telescopic or folding (Column 3, lines 3-7) arm by an independent actuator (hydraulic cylinders) to provide relocation of an imager

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selectively between cephalographic and panoramic positions (Column 8, lines 42-56, Column 12, lines 26-37). The arm is used in a system with a processing system (Column 13, line 55- Column 14, line 11). The folding arms provide a panoramic system with repeatability and a cephalographic system with repeatability and versatile positioning (Column 2, lines 46-67 and Column 3, lines 23-36).

28. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the telescopic and folding arms controlled by an independent actuator under automatic control in the system of Zeller and Doebert for the purpose of providing a system with panoramic repeatability and a cephalographic repeatability and versatile positioning (Fairleigh, Column 2, lines 46-67 and Column 3, lines 23-36). The automatic control of Fairleigh's arm could be achieved by the microprocessor of Zeller in order to allow a central location for control components.

29. Claims 18, 19 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doebert (US 5,511,106) in view of Doevert (US 6,570,953).

30. Regarding Claims 18 and 21, similarly to claims 20 and 22 above, Doevert teaches a method for operating a dental x-ray diagnostic apparatus performing real- time digital radiography in cephalography. The cephalograms are tomosynthetically produced (Doevert, Column 8, lines 55-58) and Doevert provides for the correction of image distortions (Column 9, lines 8-13).

31. Doevert does not include correction of the magnification distortion in the horizontal direction.

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32. Dobert teaches magnification distortion correction of tomosynthetically produced images. The relationship between a detector and a source are tracked so that the rigidity of the requirements of the parts with respect to one another can be relaxed (Column 2). The image is then reconstructed using magnification distortion correction so that variations during the scan are accounted for (Column 6, lines 6-33) and so that blur-free recording are obtained (Column 3, lines 4-6).

33. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the magnification distortion correction of Dobert in the system of Doeber, since the correction can account for variations of the magnification during the scan (Dobert, Column 6, lines 6-33) so that blur-free recording are obtained (Dobert, Column 3, lines 4-6).

34. Regarding Claim 19, as above Doeber and Dobert teach the step of aligning the x-ray source with an x-ray imager including the step of relocating the x-ray imager, either manually or automatically, from a Panoramic position to a Cephalographic position (Doeber, Column 4, lines 51-67 and Summary of the Invention).

#### ***Response to Arguments***

35. Applicant's arguments filed 04/25/05 have been fully considered but they are not persuasive. With respect to arguments that Zeller fails to teach certain motions, the orbital motions of Zeller involve both a rotational movement and two movements in a vertical plane. Up and down motions are two linear motions in a vertical plane.

36. With respect to arguments that Zeller fails to incorporate orbital movements, the case law relied upon, *In re de Seversky*, 474 F.2d 671, 177 USPQ 144 (CCPA 1973) involves information

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incorporated for continuing applications. The application on appeal wished to rely on information in a patent that was referenced as a “continuation in part.” No citations to specific teachings of the prior application were made. *In re de Seversky*, 177 USPQ 146 teaches that “incorporation by reference...of matter elsewhere written down...[can occur]...by means of an incorporating statement clearly identifying the subject matter which is incorporated and where it is to be found.” Therefor, the court teaches how to properly rely on references for teachings not set forth in full. The court does not mandate the use of the phrase “incorporate,” rather it requires an “incorporating statement.” In other words, the court wants a clear indication that two identified documents make one disclosure. Zeller relies upon the cited European reference to show how Zeller’s rotary unit, head retainer and positioning arrangement may operate in a known way. Zeller relies upon the European reference for a specific teaching and does not “merely” name the reference in the disclosure. Likewise, the European reference relied upon in Zeller incorporates further orbital motion teachings in a similar manner by stating that the invention may operate as taught in EP 0 229 308, corresponding to US 4,811,372. Both references to earlier applications specifically refer to a particular portion of the invention and specifically refer to where disclosure of those portions can be found. Therefor, since Zeller is not relying on the previous references for priority in a continuing application, and Zeller has followed the requirements set forth by the court for incorporating matter elsewhere written down, Applicant’s reliance on *In re de Seversky* is misplaced.

37. In view of the above, Applicant’s arguments with respect to claims 11-15 are also not persuasive.

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38. Applicant's arguments with respect to claims 18 and 19 are not persuasive. Applicant is arguing that both the x-ray beam and the x-ray source must be translated linearly. The language of Claim 18 does not require this. Source rotation in the horizontal is a coordinated movement in a horizontal plane. Only the beam is required by the claim to translate linearly. Furthermore, citations to specific portions of a reference is a courtesy to the Applicant. Applicant is still expected to apply their skill and knowledge to a reference to discover its teachings.

39. Applicant's arguments with respect to claims 20, 21 and 22 are not persuasive. The goal of Doebert is to convert between panoramic and cephalographic exposures as taught by the adjustability features (one or more drive motors) of Column 3, lines 22-33 and the Summary of the Invention.

40. Applicant's arguments with respect to claim 23 are not persuasive. Doebert does not show motion of the source in Figure 8. Collimators and the detector move to rotate, or sweep, the x-ray beam through the patient. Source motion does appear in Figure 9, which was not cited against claim 23.

### *Conclusion*

41. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

42. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

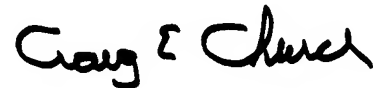
43. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Krystyna Suchecki whose telephone number is (571) 272-2495.

The examiner can normally be reached on M-F, 9-5.

44. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Glick can be reached on (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

45. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
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Craig E. Church  
Primary Examiner